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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/824,093	04/14/2004	Otto N. Fanini	414-15493-USD1	6150
24923	7590	11/16/2005	EXAMINER	
PAUL S MADAN MADAN, MOSSMAN & SRIRAM, PC 2603 AUGUSTA, SUITE 700 HOUSTON, TX 77057-1130			AURORA, REENA	
			ART UNIT	PAPER NUMBER
			2862	

DATE MAILED: 11/16/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/824,093	FANINI ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Reena Aurora	2862	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
  - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
  - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 29 August 2005.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 21 - 29 and 33 - 45 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 21 - 29 and 33 - 45 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 April 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)               | Paper No(s)/Mail Date. _____  |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>8/18/05</u> .   | 6) <input type="checkbox"/> Other: _____                                    |

### **DETAILED ACTION**

Applicant's election without traverse of invention I (claims 21 – 29 and 33 - 39) in the reply filed on 08/29/05 is acknowledged.

#### ***Claim Objections***

Claim 21 is objected to because of the following informalities: the phrase “the desired reservoir” lacks antecedent basis. Appropriate correction is required.

Claim 24 is objected to because of the following informalities: delete the word “lest” and insert the word “least”. Appropriate correction is required.

Claim 25 is objected to because of the following informalities: multiple frequency of what is being measured. What is multiple frequency survey data and how is it being measured. What is interpretative data, how is it being obtained and focused. Appropriate correction is required.

Claim 29 is objected to because of the following informalities: how is the time domain is being measured and for what signal. What is multiple frequency survey data and how is it being measured. Appropriate correction is required.

Claim 33 is objected to because of the following informalities: claim 33 depends from claim 1, claim 1 has been canceled by the applicant. For the purposes of examination, claim 33 is being treated as it depends from claim 21. Where is the aperture located. Appropriate correction is required.

Claim 34 is objected to because of the following informalities: the phrase “the aperture” lacks antecedent basis. Appropriate correction is required.

Claim 42 is objected to because of the following informalities: the phrase "the raw data" and "the repeat cycle" lacks antecedent basis. Appropriate correction is required.

Claim 44 is objected to because of the following informalities: the phrase "the transmitter repeat cycle" lacks antecedent basis. Appropriate correction is required.

Claim 45 is objected to because of the following informalities: the phrase "the raw data" lacks antecedent basis. Appropriate correction is required.

### ***Double Patenting***

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claim 21 is provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 1 of copending Application No. 10/373,365. Although the conflicting claims are not identical, they are not patentably

distinct from each other because claim 21 of the instant application is broader than and encompass the boundaries of claim 1 of copending Application No. 10/373,365 and therefore is an obvious variance from the prior defined invention..

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 21, 22 and 24 - 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wu et al. (Re. 35,386) in view of Kriegshauser et al. (6,466,872).

As to claims 21, 22, 24, 25 and 29, Wu et al. (hereinafter Wu) discloses a method for drilling directional wells wherein conveying a multi-component resistivity logging tool into a borehole in a selected layer the formation. Wu does not explicitly disclose using transmitter receiver combinations to provide measurement selective sensitivity to the desired reservoir formation properties. Kriegshauser et al. (hereinafter Kriegshauser) discloses a method of determining a parameter of interest of subsurface formations wherein using transmitter receiver combination to provide measurement selective sensitivity to the desired reservoir formation properties (col. 3, lines 49 – 53 and col. 3, line 64 – col. 4, line 2). Therefore, it would have been obvious to one having ordinary

skill in the art at the time of invention to modify the device of Wu in view of Kriegshauser to use transmitter receiver combination to provide measurement selective sensitivity to the desired reservoir formation properties in earth formations which contribute only a small amount of overall response of the instrument and their presence will not be masked by the presence of thin conductive layers when multicomponent resistivity measurements are made (col. 1, lines 53 - 66).

As to claims 26 - 28, Wu does not explicitly disclose that multi-component transmitter receiver array measurements are performed at different orthogonal and non-orthogonal orientations. Kriegshauser discloses that the multi-component transmitter receiver array measurements are performed at different orthogonal and non-orthogonal orientations (101, 103, 105, 107, 109, 111, 113, 115, fig. 2). Therefore, it would have been obvious to one having ordinary skill in the art at the time of invention to modify the device of Wu in view of Kriegshauser to perform the measurements at different orthogonal and non-orthogonal orientations such that thin layers of substantially non-conductive layers in earth formations which contribute only a small amount of overall response of the instrument and their presence will not be masked by the presence of thin conductive layers when multi-component resistivity measurements are made (col. 1, lines 53 - 66).

Claim 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wu et al. (Re. 35,386) in view of Kriegshauser et al. (6,466,872) as applied to claim 21 above, and further in view of Hagiwara et al. (6,181,138).

As to claims 23 and 36, Wu and Kriegshauser fails to disclose that measurement of a multi-component array combined with measurement of at least one of a gyro, accelerometer, magnetometer and inclinometer. Hagiwara et al. (hereinafter Hagiwara) discloses directional resistivity measurements wherein Hagiwara further discloses well bore directional measurements can be made using accelerometer or magnetometer (col. 6, lines 15 - 27). Therefore, it would have been obvious to one having ordinary skill in the art at the time of invention to modify the device of Wu in view of Kriegshauser and further in view of Hagiwara to include a accelerometer or magnetometer for accurately providing the directional measurements.

Claims 33 - 45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wu et al. (Re. 35,386) in view of Kriegshauser et al. (6,466,872) as applied to claim 21 above, and further in view of Clark et al. (6,297,639).

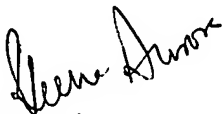
As to claims 33 – 45, Wu and Kriegshauser fail to show a first aperture shaped to focus a magnetic field for a first coil associated with the first aperture. Clark et al. (hereinafter Clark) discloses a method and apparatus for directional well logging with a shield having sloped slots having a first aperture (12, fig. 3 and 4) shaped to focus a magnetic field for a first coil (11). Therefore, it would have been obvious to one having ordinary skill in the art at the time of invention to modify the device of Wu in view of Kriegshauser and further in view of Clark to provide an aperture shaped to focus magnetic field for a first coil to provide optimum shielding effect.

Art Unit: 2862

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Reena Aurora whose telephone number is 571-272-2263. The examiner can normally be reached on Monday - Friday, 7:00 - 3:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, E. Lefkowitz can be reached on 571-272-2180. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read 'Reena Aurora', is positioned above the printed name.

Reena Aurora